

# Executive Summary

The Massachusetts Bay Transportation Authority (MBTA) proposes to extend commuter rail service to Southeastern Massachusetts to address substantial public needs, including reducing congestion on the already over-taxed public highways, improving highway safety, improving regional air quality, improving the regional transit system capacity, improving access to opportunity, mode choice and transportation system continuity, and fostering economic development.

The MBTA has prepared this Final Environmental Impact Report (FEIR) in compliance with the Massachusetts Environmental Policy Act (MEPA) and its implementing regulations at 301 CMR 11.00 et seq. This FEIR provides the detailed analysis of the Stoughton Alternative required by the Secretary's Certificate on the Supplemental Draft Environmental Impact Report (SDEIR), responds to the issues raised in the Certificate and provides a summary of responses to issues raised in over 600 substantive comment letters and by 185 commentors at the Public Hearings on the SDEIR. The FEIR also responds to the comments on the Notice of Project Change filed with the MEPA Office concerning the Freetown Layover Facility alternatives. The FEIR also contains a proposed Section 61 Finding for the agency actions to be taken on the project.

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## Key Issues

The Secretary's Certificate on the SDEIR and the many comment letters identified several key issues that are addressed in this FEIR. In summary, the Secretary's Certificate concurred with the MBTA's conclusion that only the Stoughton Alternative is practicable, and required that the MBTA prepare a Final EIR that provides a more detailed analysis of impacts to wetlands, rare species, and historic resources. The FEIR was required to provide a greater analysis of alternatives within the Stoughton Alternative corridor, and to avoid, minimize and mitigate impacts to the natural and human environment. In order to accomplish this, a number of changes have been made to the design concepts shown for the stations, frontage road and intersections to minimize impacts or due to changes in the environment (recent construction). The following changes have occurred since the SDEIR:

- Modifications to the North Easton Station
- Modifications to the Freetown Station
- Modifications to the East Taunton Station
- Modifications to the New Bedford Station

- New location for the Raynham Station
- Revisions to the Frontage Road concept in Stoughton
- Revised intersection improvements throughout the project
- Identification of two alternatives for the Freetown Layover Facility.
- Two design options for construction in the Hockomock Swamp Area of Critical Environmental Concern (ACEC), the At-Grade Alternative and the Trestle Alternative

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## Wetlands

The Certificate required additional studies to determine the full extent of impacts of the project to wetlands, and noted that the FEIR should present locally approved delineations of all resources regulated under the Wetlands Protection Act.

In response to the requirements of the Certificate and the substantive comments on the SDEIR, the MBTA has identified all wetland resource areas along the project corridor and located the boundaries of wetlands via field delineation and survey. Abbreviated Requests for Resource Area Delineation (ANRADs) have been submitted to the Conservation Commissions in Taunton, Berkley, Lakeville, Freetown, Fall River, and New Bedford for review and approval. These ANRADs provide information on bordering vegetated wetlands, bank, bordering land subject to flooding, riverfront area, and other state-regulated resource areas. Wetland resource areas in communities north of Taunton were previously documented and approved, as stated in the SDEIR.

The MBTA has re-evaluated wetland impacts based on the new wetland delineation, and has revised the prior estimates of wetland impacts. Measures to minimize unavoidable wetland impacts have been identified and are discussed in the FEIR.

The FEIR also provides an expanded analysis of wetland mitigation. The MBTA is committed to providing replacement of lost wetland functions and values, and to replacing lost wetland area at a 2:1 mitigation ratio. The FEIR presents an analysis of potential wetland mitigation sites, which emphasize opportunities to restore degraded wetlands, and that demonstrates that it is feasible to meet these mitigation goals.

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## Rare Species and Biological Diversity

The Certificate recognized the significance of the Hockomock Swamp Area of Critical Environmental Concern (ACEC), and required that the FEIR present the results of additional survey and mapping of rare species habitat. The Secretary also directed the

MBTA to develop additional sub-alternatives within the proposed Stoughton Corridor that will avoid or minimize direct and indirect impacts to wildlife resources.

Since the SDEIR, the MBTA has conducted an extensive survey of rare species habitats and distributions in the Hockomock Swamp and Pine Swamp. The survey methodology and results (which are summarized in Section 4.3.4 of the FEIR) were developed in consultation with the Natural Heritage Program and the Department of Environmental Management (DEM)'s ACEC Program. This intensive study documented the distribution and abundance of the seven state-listed species that occur in the Hockomock Swamp. Based on this information, the MBTA has developed a detailed Conservation Plan that includes all practicable means and measures to avoid harm to these state-listed species and their habitats.

In response to the Secretary's Certificate, the MBTA also investigated a number of alternative design concepts through the Hockomock Swamp and developed a trestle alternative that would minimize impacts to rare species and adjacent wetlands. The MBTA also relocated the Raynham Station to Ryan Industrial Park, which is south of the Raynham Taunton Greyhound Park and which can be constructed with no impacts to rare species or to wetlands within the ACEC. These measures, and other elements of the Conservation Plan, are described in Section 4.3 of this FEIR.

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## Historic Resources

The Certificate required the MBTA to work with the Massachusetts Historical Commission (MHC) to identify historical resources within the Stoughton Alternative corridor, to provide information requested by the MHC, and to document the status of the historic and archaeological studies.

The MBTA has completed a detailed reconnaissance inventory of sub-surface (archaeological) resources, and an inventory of above-ground historic resources. The results of these inventories have been provided to MHC. A detailed report will be provided to MHC during the public comment period, identifying and documenting all historical resources along the corridor. All resources currently on the National or State Register of Historic Places, and all resources that are potentially eligible for listing, have been identified. Many of these resources are directly adjacent to the railroad right-of-way (ROW) and are associated with or result from the original development of the railroad. The MBTA has coordinated with the Massachusetts Historic Commission during preparation of the FEIR with respect to the identification of historic resources. Section 4.9 of the FEIR provides a report on historic and archaeological resources that includes a description of existing historic resources, potential impacts, and mitigation measures. These potential impacts would include direct effects and indirect effects such as vibration or change in the visual setting or character. The subsequent federal Section 106 process is anticipated to include a detailed impacts and mitigation analysis, as acknowledged in the

Secretary's Certificate on the SDEIR. The MBTA has met with the Corps of Engineers to initiate this federal review.

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## Growth Management

The Certificate requested that the MBTA provide specific commitments on the funding of the Land Development Task Force (referred to in this FEIR as the Growth Management Task Force), a schedule and a summary of the Task Force's conclusions to date. The purpose of the Task Force is to address issues relating to the secondary growth-related impacts of improved transportation infrastructure. As required in Executive Order 385, state agencies have a responsibility to help communities deal in a coordinated fashion with growth impacts. The Secretary recognized that rail transit, if implemented in coordination with proactive land use planning, can foster more sustainable development patterns, and required the MBTA to create a Land Development Task Force to develop recommendations for local and regional growth management planning and control.

The Task Force has been established for the Project and is being coordinated by the regional planning agencies (RPAs) (Southeastern Regional Planning and Economic Development District for Taunton, Lakeville, Freetown, Fall River and New Bedford; Old Colony Planning Council for Stoughton, Easton, and Raynham); and MAPC for Canton and a portion of Stoughton). The RPAs will assist the Task Force with developing recommendations for local zoning and planning measures that will foster transit-oriented development and control residential and commercial growth that may be accelerated by the availability of commuter rail. The first Task Force Meeting was held on February 6, 2002 and additional meetings will be scheduled in the next 18 months, which is the target date for completion of a report containing the Task Force's findings and recommendations. Section 4.11 of the FEIR provides information on the status, participants and schedule of the Growth Management Task Force.

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## Purpose and Need

Southeastern Massachusetts is one of the fastest areas of growth in the Commonwealth. The New Bedford/Fall River Commuter Rail Extension study area includes 18 communities and encompasses approximately 632 square miles, including the heavily urbanized areas of Fall River, New Bedford, and Taunton as well as several fast growing rural communities such as Raynham, Freetown, Berkley, and Westport. In 1990, the total population of the study area was approximately 422,190. The 2000 Census results show that the study area population has grown to 440,396, a number that is projected to grow to approximately 506,710 by the year 2020. This trend represents an increase in population of over 12 percent during the next two decades. It is expected that the towns of Berkley, Lakeville, and Rochester will lead the population growth, all with growth rates above 35 percent even in the absence of commuter rail.

As the affordable housing market has moved further from the Boston metropolitan area, the region has become one of the fastest growing areas in the commonwealth. Many of the people relocating to the area are retaining their jobs in the Boston market. Most of the commuter trips from the region to the Boston market are in single-occupant vehicles. To a large extent this can be attributed to the lack of public transit alternatives other than bus service. Few additional investments in the transportation facilities and services in the region are programmed and the current transportation system serving the region is inadequate to meet the current needs of the region and will not meet the future demand placed upon it as indicated by increasing traffic congestion and accidents.

The transportation system serving Southeastern Massachusetts is inadequate to meet the current and projected needs of the region. An evaluation of transportation and demographic data and trends has identified the following needs for transportation improvements:

- Reduce highway congestion;
- Improve air quality;
- Improve the regional transit system capacity;
- Improve access to opportunity;
- Improve mode choice and connectivity; and
- Foster economic development.

The New Bedford/Fall River Commuter Rail Extension Project is part of a comprehensive effort to achieve a series of broad study area transportation and development goals, as well as specific objectives for improving the quality of transportation services and the equity of the distribution of services within the study area. These goals and objectives have been developed as part of both broad-based policies and specific regional documents.

New transportation solutions for Southeastern Massachusetts must be developed within the context of regional transportation issues, national and local public policy on transportation, and transportation goals and objectives for the region. The long-term transportation plans for the three planning regions support the development and enhancement of transit services. The Old Colony Planning Council's Long Range Transportation Plan specifically identifies the extension of commuter rail service from Stoughton south to Easton and beyond as a more efficient mode of transportation for the area.

Currently, the Southeastern Massachusetts region is faced with four major transportation needs/deficiencies:

- Lack of transportation capacity to downtown Boston
- Congestion on highway and transit facilities serving the region
- Safety impacts
- Air quality impacts

Improvements to the transportation facilities and services in the region will be necessary to address the transportation issues facing the region. These solutions must be in line with a transportation policy that encourages a multimodal transportation system and addresses the region's transportation goals and objectives. Since highway solutions are discouraged by policy, largely infeasible, and likely ineffective given the physical constraints of the metropolitan Boston area, public transit enhancements linking the region to downtown Boston are the only remaining practical solution.

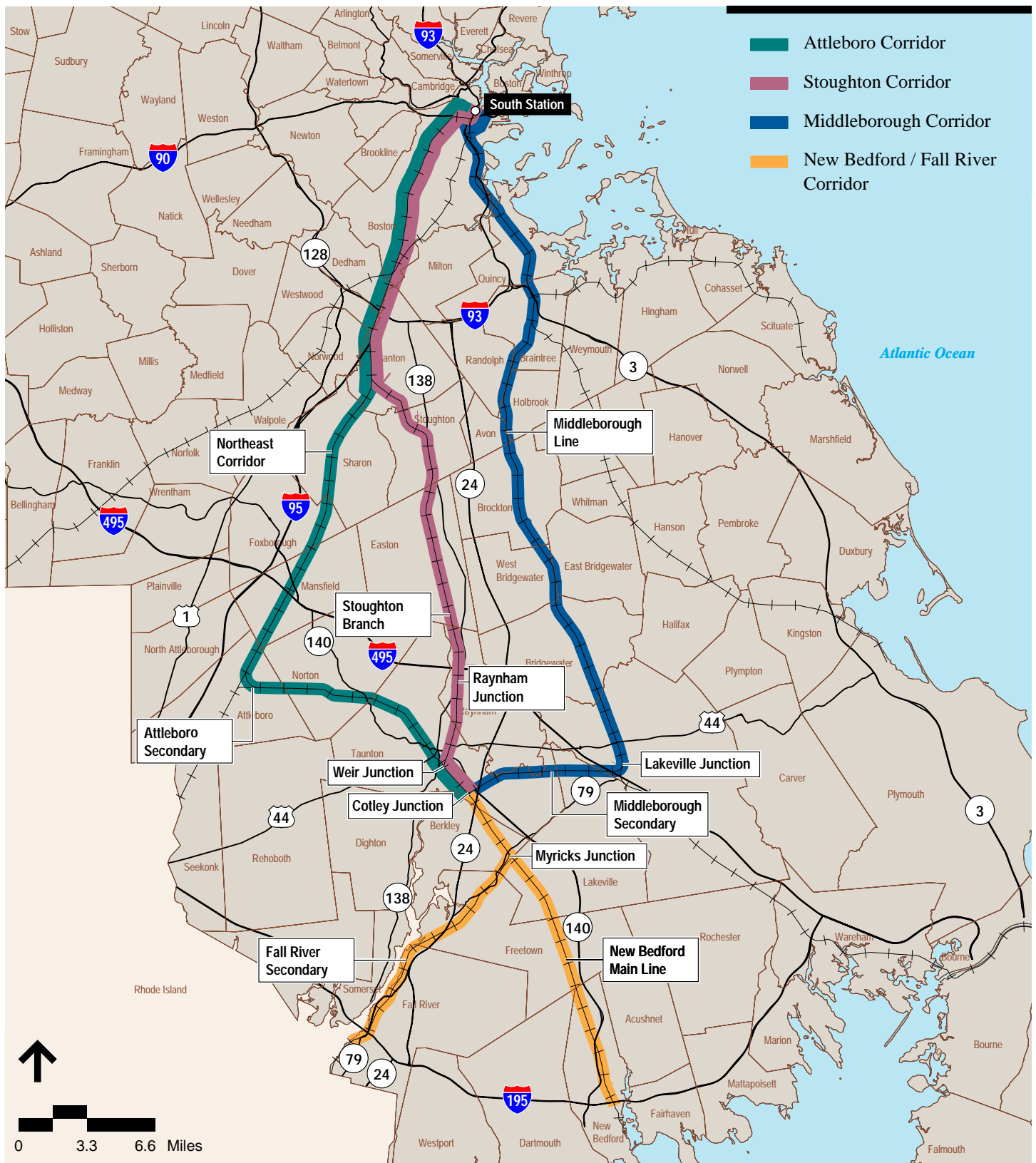
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## Alternatives Considered

The SDEIR provided a detailed reassessment of 5 transportation alternatives (see Figure E-1) and the No-Build Alternative. Based on this analysis, the Secretary of EOEA stated, "The MBTA ... has concluded that only the Stoughton Alternative is practicable. In particular, the MBTA finds that the Attleboro Alternative is no longer practicable, based on capacity constraints caused by the expansion of Amtrak high-speed rail service in the Boston-New York Corridor. Based on review of the SDEIR analysis, I agree with that assessment for the purposes of MEPA review. Therefore, the FEIR does not have to provide additional analysis of any alternative other than the Stoughton Alternative. "

This section summarizes the prior alternatives analysis and the rationale for the determination that only the Stoughton Alternative is practicable (see Table E-1). The following six alternatives were included in the Supplemental DEIR:

- The No-Build Alternative
- The Middleborough Alternative
- The Attleboro Alternative
- The Attleboro Alternative with the North Easton Extension
- The Stoughton Alternative
- The Enhanced Bus Service Alternative



New Bedford / Fall River Commuter Rail



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Study Corridors

Figure E-1

**Table E-1**  
**Summary of Alternatives**

Alternative	Daily Inbound Ridership	Summary of Analysis
Attleboro	2,470	Not feasible due to operational constraints on Northeast Corridor; does not meet MBTA Service Standards
Attleboro /North Easton	3,620	Not feasible due to operational constraints; does not meet MBTA Service Standards low ridership; does not meet project transportation objectives; not cost-effective
Middleborough (without relocated station)	1,230	Not feasible due to operational constraints; does not meet MBTA Service Standards; low ridership; does not meet project transportation objectives; not cost-effective
Middleborough with relocated Lakeville Station	1,330	Not feasible due to operational constraints; does not meet MBTA Service Standards low ridership; does not meet project transportation objectives; not cost-effective
Stoughton	4,280*	Meets project objectives with respect to transportation benefits and cost-effectiveness; meets MBTA Service Standards; high ridership
Enhanced Bus Service	3,280	Does not meet project objectives; does not meet MBTA service schedule; requires modifications to South Station bus facility

\*From new stations – does not include riders from Stoughton Center, Canton Center or Canton Junction

**No-Build Alternative.** A No-Build Alternative was considered for purposes of establishing a base condition, which would exist if no further actions were taken and no project built and against which capital and operating improvement project could be compared. This consists of the existing transportation facilities and services and all and committed transportation improvement projects. **The No-Build Alternative is not practicable, as it does not meet the project purpose and need.**

**The Middleborough Alternative** would provide service from South Station to Lakeville via the Middleborough Line of the Old Colony Railroad. Service to New Bedford and Fall River would follow the existing Middleborough Secondary from Lakeville to Cotley Junction in East Taunton, and would diverge to the respective end points from Myricks Junction. The Middleborough Alternative was analyzed with service to the existing Lakeville Station (located south of Lakeville Junction), which would increase trip length by 10 minutes, and with construction of a relocated Lakeville Station along the Middleborough Secondary of the Old Colony Railroad. Constructing this new station would result in travel time savings of about 10 minutes, but would result in abandonment of the recently constructed Lakeville Station to the south of Lakeville Junction. This alternative would also require the East Taunton Station to be constructed either south of Cotley Junction or along the Middleborough Secondary, to avoid a second “reverse move” and time delay. The



Middleborough Alternative would not provide service to the Back Bay Station, since the Old Colony Service uses right-of-way through Dorchester and South Boston. **The Middleborough Alternative is not practicable because it does not meet the MBTA's Service Delivery Policy, has unacceptably low ridership, and would be likely to result in service disruptions of the Old Colony line system.**

**The Attleboro Alternative** would utilize the existing Northeast Corridor (Amtrak's Shore Line) from Boston's South Station to Attleboro, where trains will proceed east to Taunton along the Attleboro Secondary. From Cotley Junction in Taunton, trains will proceed south on the New Bedford Main Line. Trains to Fall River will diverge at Myricks Junction in Lakeville along the Fall River Secondary. Construction of the Attleboro Alternative would require construction of 2 new bypass tracks on a new cross-country alignment diverging from the Northeast Corridor (Shore Line), approximately 2.5 miles north of the Attleboro Station, connecting to the Attleboro Secondary. This Attleboro Bypass would be a two-track bypass, which is critical to ensure that commuter rail trains can enter and exit the Northeast Corridor at 45 MPH, so Amtrak High Speed Rail service will not be interrupted.

With the exception of the Attleboro Bypass, the Attleboro Alternative will utilize existing active freight track. The track infrastructure condition varies, but no portions of the Attleboro, New Bedford, or Fall River lines are in acceptable condition for commuter rail service at required operating speeds.

The Attleboro Alternative is not practicable because it does not meet the minimum requirements of the MBTA's Service Delivery Policy, and would result in unacceptable impacts on-time performance throughout the entire South Station commuter rail system.

**The Attleboro/North Easton Alternative** provides service to New Bedford and Fall River using the Attleboro Alternative described above. In addition to implementation of rail service via the Attleboro Alternative, this alternative includes extension of the Stoughton Line to North Easton. No changes in train frequency on the Stoughton Line are included in this alternative; however, the longer running distance to North Easton will require construction of a second track from Canton Junction to the Stoughton Station, and construction of 2 tracks along the inactive ROW approximately 3 miles south from Stoughton Center to the proposed North Easton Station. **This alternative is not practicable for all of the reasons that render the Attleboro Alternative not practicable: because it does not meet the minimum requirements of the MBTA's Service Delivery Policy, and would result in unacceptable impacts on-time performance throughout the entire South Side commuter rail system.**

**The Enhanced Bus Service Alternative** builds upon the existing bus services operated in the area to provide an increased peak period and daily line haul capacity. It includes operational and capital improvements to the existing bus routes between Taunton, Fall River, New Bedford, and Boston that would be undertaken by the

independent bus service providers. The MBTA enabling legislation (MGL Chapter 161A) dictates the types and areas in which the MBTA can provide service. The MBTA may provide fixed guide way (i.e., rail) service anywhere in the Commonwealth. MBTA Bus service, however, is limited to the 78 cities and towns within the original regional transit service district. All of the cities and towns, which would receive service under the commuter rail proposal, are outside of the service area. As such, bus service would need to be provided by the regional transit authority (RTA) in the area. While the MBTA would certainly coordinate any bus to rail service with the RTAs, the MBTA could not provide the service itself.

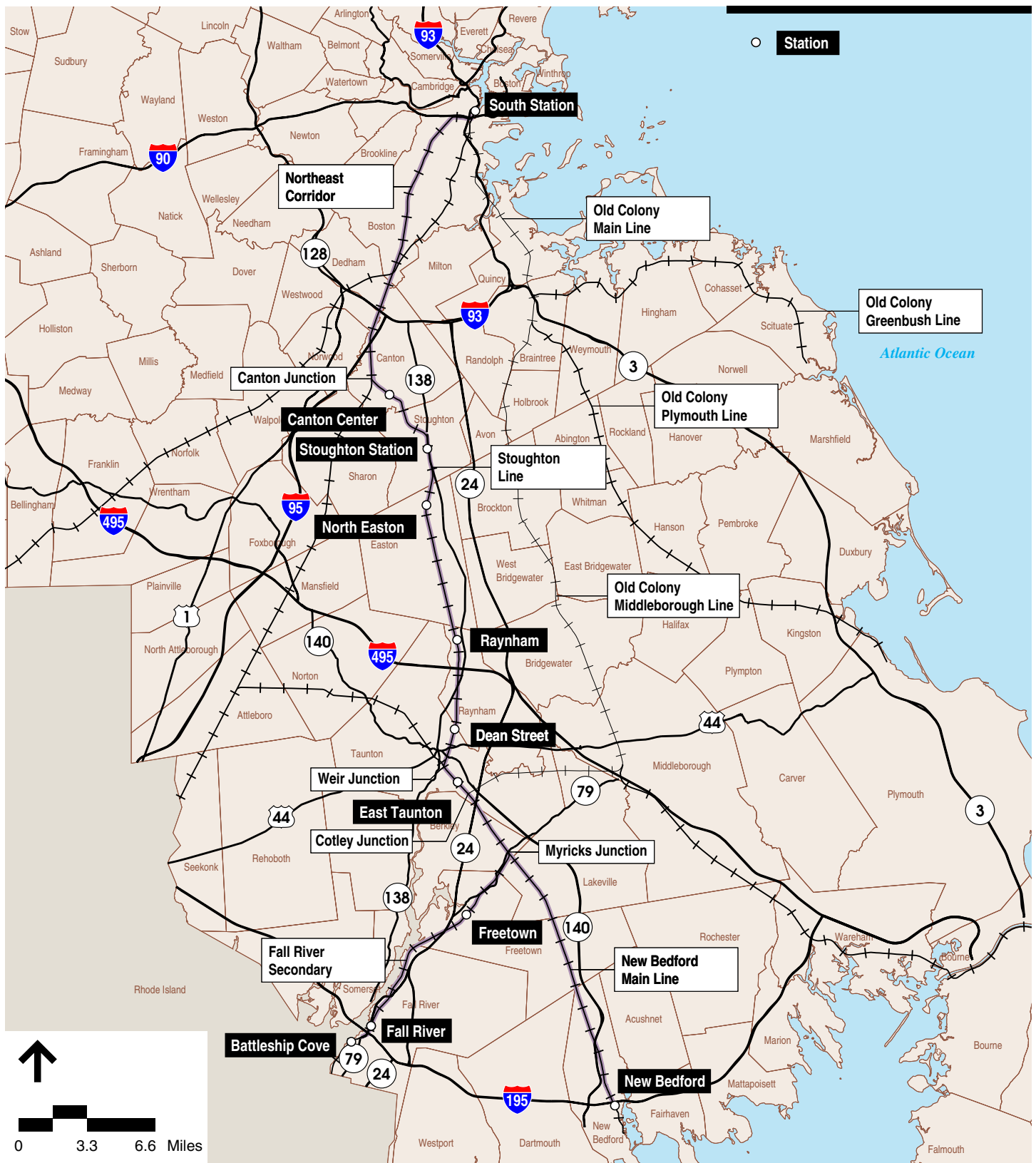
This alternative would enhance the attractiveness of existing commuter bus service by adding trips to fill gaps in the existing service. Enhancements vary by route but include frequency improvements, additional parking capacity, and additional stops within the study area along the route to Boston. **The Bus Alternative is not practicable because it would not meet the purpose and need of the project.** The ability of the commuter bus service to meet on-time performance criteria is expected to diminish as the number of vehicles and level of congestion increases on the region's highway. The multiple buses needed to meet the peak-period ridership projections add vehicle trips to the highway system and overload the already-crowded bus terminal at South Station. Trip times are projected to be longer than any rail alternative and less reliable.

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## The MBTA's Preferred Alternative

The Secretary of EOEA concurred with the MBTA that the Stoughton Alternative is the only practicable alternative that will meet the project's objectives. Therefore, this FEIR provides a detailed analysis of the Stoughton Alternative only. The Secretary also required that the MBTA examine sub-alternatives within the Stoughton corridor that would avoid or minimize impact to wetlands, rare species, historic resources, and other aspects of the natural and human environment. The FEIR describes and provides an analysis of these sub-alternatives

The Stoughton Alternative, presented in this Final EIR as the MBTA's Preferred Alternative (see Figure E-2), will provide commuter rail service from South Station to New Bedford and Fall River through an extension of the existing Stoughton Line. Service would extend from the existing Stoughton Station to New Bedford and Fall River and would follow the existing inactive Stoughton Line to Longmeadow (Winter) Street in Taunton. From Longmeadow Street, the Stoughton Alternative would use existing freight tracks through the east side of Taunton to Weir Junction and continue on through Cotley Junction in East Taunton to Myricks Junction in Berkley, where the routes to New Bedford and Fall River diverge. The distance along this rail route from the Stoughton Station to New Bedford is 35.4 miles and to Fall River is 33 miles. The overall distance from South Station to New Bedford is 54.5 miles and to Fall River is 52.1 miles.



New Bedford / Fall River Commuter Rail

Figure E-2



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Stoughton Alternative

This alternative would use existing active commuter rail tracks from South Station to the Stoughton Station, with the addition of a second track between Canton Junction and Stoughton Station. South of Stoughton Station, it would require the reconstruction of 14 miles of currently inactive track right-of-way from Brock Street, Stoughton to Winter Street in Taunton, and the upgrading and rehabilitation of 2 miles of existing freight rail lines from Longmeadow Street to Weir Junction in Taunton, as well as upgrading existing freight rail infrastructure from Weir Junction to the terminal stations in Fall River and New Bedford. The New Bedford Main Line would require adding a second track parallel to the existing freight tracks (within a ROW originally constructed and used for 2 tracks). The Fall River line would remain single-tracked, with the addition of passing sidings to facilitate train movements (see Table E-2, Summary of Project Segments).

**Table E-2**  
**Summary of Project Segments**

<b>Segment</b>	<b>Length</b>	<b>Work Required</b>	<b>Stations</b>
South Station to Canton Junction	14.8 miles	None	No new stations
Canton Junction to Stoughton Station	4.3 miles	Construction of a second track adjacent to the existing active commuter rail track, with necessary ROW improvements	Modifications to existing Canton Center and Stoughton stations
Stoughton Station to Winter Street	14.2 miles	Reconstruction of inactive right-of-way, bridges, crossings, and signals: grade separation at Route 138	North Easton Raynham
Winter Street to Weir Junction (Ingell Street)	1.6 miles	Reconstruction of existing active freight track, signals, crossings, and bridges	Dean Street
Weir Junction to Cotley Junction	1.6 miles	Reconstruction of existing active freight track, signals, crossings and bridges	East Taunton
Cotley Junction to Myricks Junction	3.4 miles	Reconstruction of existing active freight track, addition of a second track, signals, crossings and bridges	None
Myricks Junction to Fall River	12.2 miles	Reconstruction of existing active freight track, signals, crossings and bridges	Freetown Fall River Battleship Cove
Myricks Junction to New Bedford	14.6 miles	Reconstruction of existing active freight track and the addition of a second track, signals, crossings and bridges	New Bedford

## **Commuter Rail Stations & Layover Facilities**

The MBTA is planning to modify two existing commuter rail station and construct eight new commuter stations to serve the New Bedford/Fall River Commuter Rail Project for the Stoughton Alternative (please see Conceptual Station Layouts). Layover facilities are proposed in New Bedford and Freetown. The MBTA filed a Notice of Project Change on October 31, 2001 for two alternative layover sites in Freetown, a site off South Main Street and a site off of Ridge Hill Road.

- Canton Center Station (modifications)
- Stoughton Center Station (modifications)
- North Easton Station
- Raynham Station
- Dean Street (Taunton)
- East Taunton Station
- Freetown Station
- Fall River Station
- Battleship Cove Station (Fall River)
- New Bedford Station

All stations on the line will provide paved surface parking with designated handicapped spaces, plus pedestrian and bicycle access from adjacent streets. The Fall River Station will have a structured parking deck. The stations will be fully accessible with hi-level station platforms and access ramps (Canton Center will be a low level with a mini-high accessible platform) and will also feature bicycle racks, windscreens, information kiosks, trash receptacles, benches and newspaper boxes. Patrons heading inbound to Boston will purchase tickets from conductors on the train and commuters can also purchase tickets at Boston stations for outbound trips and round trips.

### **Canton Center Station Facts**

- Site Location: Washington Street, Canton
- Former/Current Use of Site: Existing Commuter Rail Station
- Ownership: MBTA
- Existing Number of Parking Spaces: 190
- Handicapped Spaces: 6 handicapped accessible spaces
- Driveway Entrance: Off Washington Street
- Cost of Ticket: Zone 3/\$3.00 eachway/\$102.00 monthly

#### **Stoughton Station Facts**

- Site Location: Off Wyman Street and Railroad Avenue, Stoughton
- Former/Current Use of Site: Existing Commuter Rail Station
- Ownership: MBTA/Private
- Proposed Number of Parking Spaces: 488
- Handicapped Spaces: 9 handicapped accessible spaces
- Driveway Entrance: Off Washington Street/Route 138 & Wyman Street/Morton Street
- Cost of Ticket: Zone 4/\$3.50 eachway/\$119.00 monthly pass

#### **North Easton Station Facts**

- Site Location: West of Route 138, Easton/Stoughton Town Line
- Former/Current Use of Site: Abandoned site. Industrial zoned. Adjacent to proposed Roche Bros. retail center.
- Ownership: Private
- Estimated Number of Parking Spaces: 1214
- Handicapped Spaces: 24 handicapped accessible spaces
- Driveway Entrance: Off Route 138 via a shared access driveway with Roche Brothers
- Cost of Ticket: Zone 5/\$4.00 eachway/\$136.00 monthly pass

#### **Raynham Station Facts**

- Site Location: West of Route 138, off Ryan Drive
- Former/Current Use of Site: Commercial/Industrial
- Ownership: Private
- Estimated Number of Parking Spaces: 467
- Handicapped Spaces: 10 handicapped accessible spaces
- Driveway Entrance: Ryan Drive (off Route 138)
- Cost of Ticket: Zone 6/\$4.25 eachway/\$145.00 monthly pass

#### **Dean Street (Taunton) Station Facts**

- Site Location: Arlington St./Railroad Avenue (off Route 44/Dean St.)
- Former/Current Use of Site: Industrial
- Ownership: Private
- Estimated Number of Parking Spaces: 642
- Handicapped Spaces: 13 handicapped accessible spaces
- Driveway Entrance: Railroad Avenue (off Arlington St.)
- Cost of Ticket: Zone 7/\$4.50 eachway/\$153.00 monthly pass

#### **East Taunton Station Facts**

- Site Location: Off Route 140 (County Street)
- Former/Current Use of Site: Retail development, vacant land behind Target Store.
- Ownership: Private
- Estimated Number of Parking Spaces: 1,332
- Handicapped Spaces: 27 handicapped accessible spaces
- Driveway Entrance: Off Route 140 via Erika Drive @ Home Depot and Target Retail Store driveway.
- Cost of Ticket: Zone 7/\$4.50 eachway/\$153.00 monthly pass

#### **Freetown Station Facts**

- Site Location: Main Street/Rte. 79/Ridge Hill Road
- Former/Current Use of Site: Portions formerly used as sand/gravel pit and Industrial
- Ownership: Private
- Estimated Number of Parking Spaces: 600
- Handicapped Spaces: 12 handicapped accessible spaces
- Driveway Entrance: Proposed access road off of Ridge Hill Road.
- Cost of Ticket: Zone 8/\$5.00 eachway/\$159.00 monthly pass

#### **Fall River Station Facts**

- Site Location: Intersection of Pearce St./North Davol St.
- Former/Current Use of Site: A portion of the site was the former Old Colony Depot. Other portions formerly used for industrial activities, including a foundry and steel company.
- Ownership: CSX and private owners
- Estimated Number of Parking Spaces: 510 (parking deck structure)
- Handicapped Spaces: 16 handicapped accessible spaces
- Driveway Entrance: Davol Street
- Cost of Ticket: Zone 9/\$5.75 eachway/\$169.00 monthly pass

#### **Battleship Cove (Fall River) Station Location**

- Site Location: Off Water Street, Near Anawan Street
- Former/Current Use of Site: Industrial zoned area. Vacant lot.
- Ownership: City of Fall River
- Estimated Number of Parking Spaces: 6
- Handicapped Spaces: 1 handicapped accessible space
- Driveway Entrance: Proposed access road off Water Street (Porta Delgada Boulevard).
- Cost of Ticket: Zone 9/\$5.75 eachway/\$169.00 monthly pass

#### New Bedford Station Facts

- Site Location: Acushnet Avenue, Wamsutta Street, Route 18, Herman Melville Boulevard
- Former/Current Use of Site: Railroad-freight yard, maintenance yard, sidings, and station site
- Ownership: CSX/ City of New Bedford/Private property owners
- Estimated Number of Parking Spaces: 795
- Handicapped Spaces: 16 handicapped accessible spaces
- Driveway Entrance: Acushnet Avenue
- Cost of Ticket: Zone 9/\$5.75 eachway/\$169.00 monthly pass

#### **Operations**

The operations analysis has established that the Stoughton Alternative could provide 36 daily trips, with 16 trains per day (8 round trips) between Boston and Fall River and 16 trains per day (8 round trips) between Boston and New Bedford. An additional 4 daily trains (2 round trips) would be scheduled between Boston and the Dean Street Station. This represents an addition of 6 daily trips to the existing Stoughton Line service, as the proposed New Bedford/Fall River service would be accomplished by extending existing routes. There would be 3 peak hour trips in each direction on each route (i.e., 3 morning peak-hour trips between New Bedford and Boston, and 3 evening peak-hour trips) and 10 off-peak trips. The travel time between Boston and the terminal stations would be approximately 1 hour and 20 minutes. Table E-3 represents the proposed MBTA Operating Schedule. The following paragraphs describe the infrastructure improvements along each segment of the New Bedford/Fall River Commuter Rail corridor.

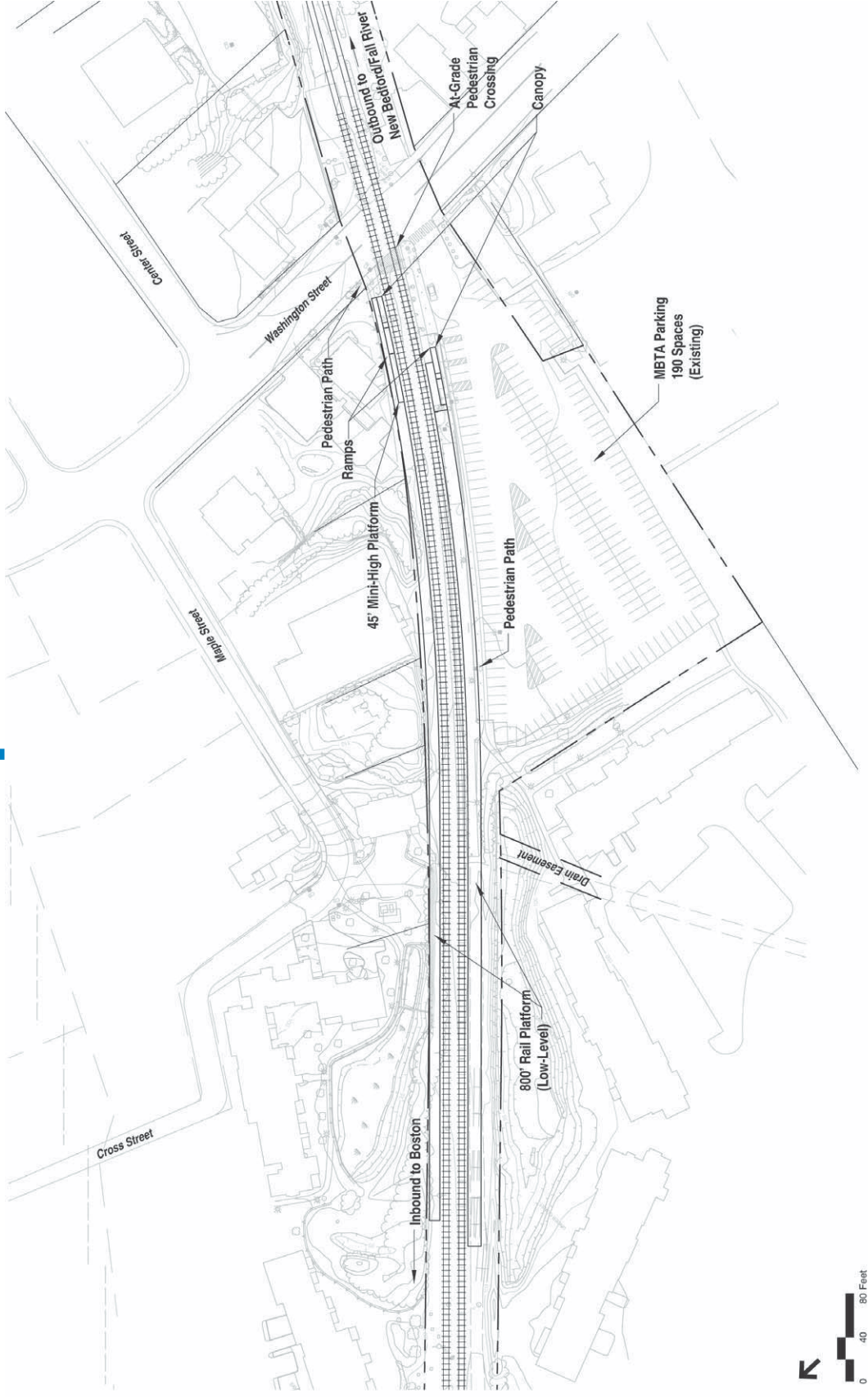
**Boston to Stoughton** - This segment of the Stoughton Branch is currently in use for commuter rail service, but will require construction of a second track from Canton Junction to Stoughton, and modifications to existing bridges and grade crossings to accommodate the proposed operation of service to New Bedford and Fall River.





MBTA New Bedford/Fall River Commuter Rail Extension

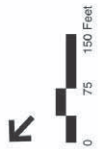
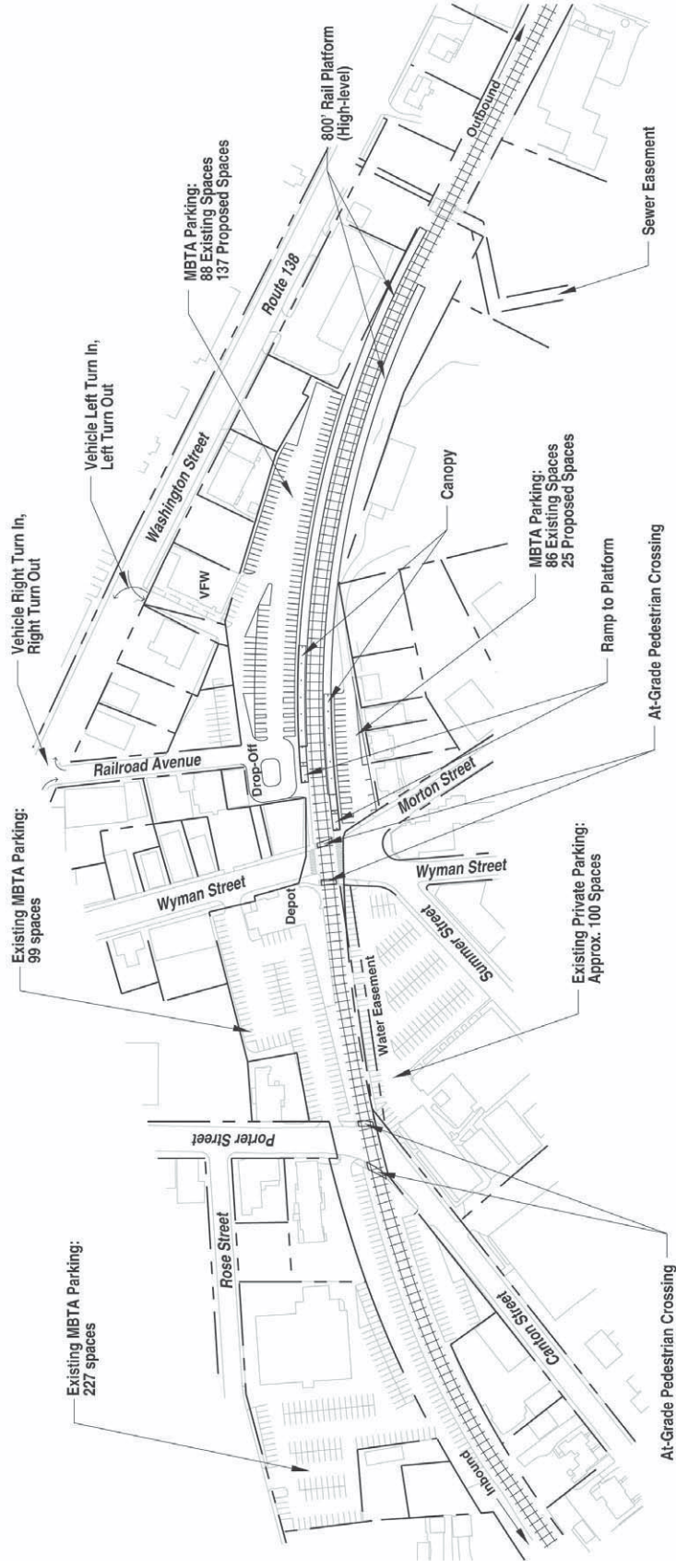
# Canton Station - Conceptual Site Plan





MBTA New Bedford/Fall River Commuter Rail Extension

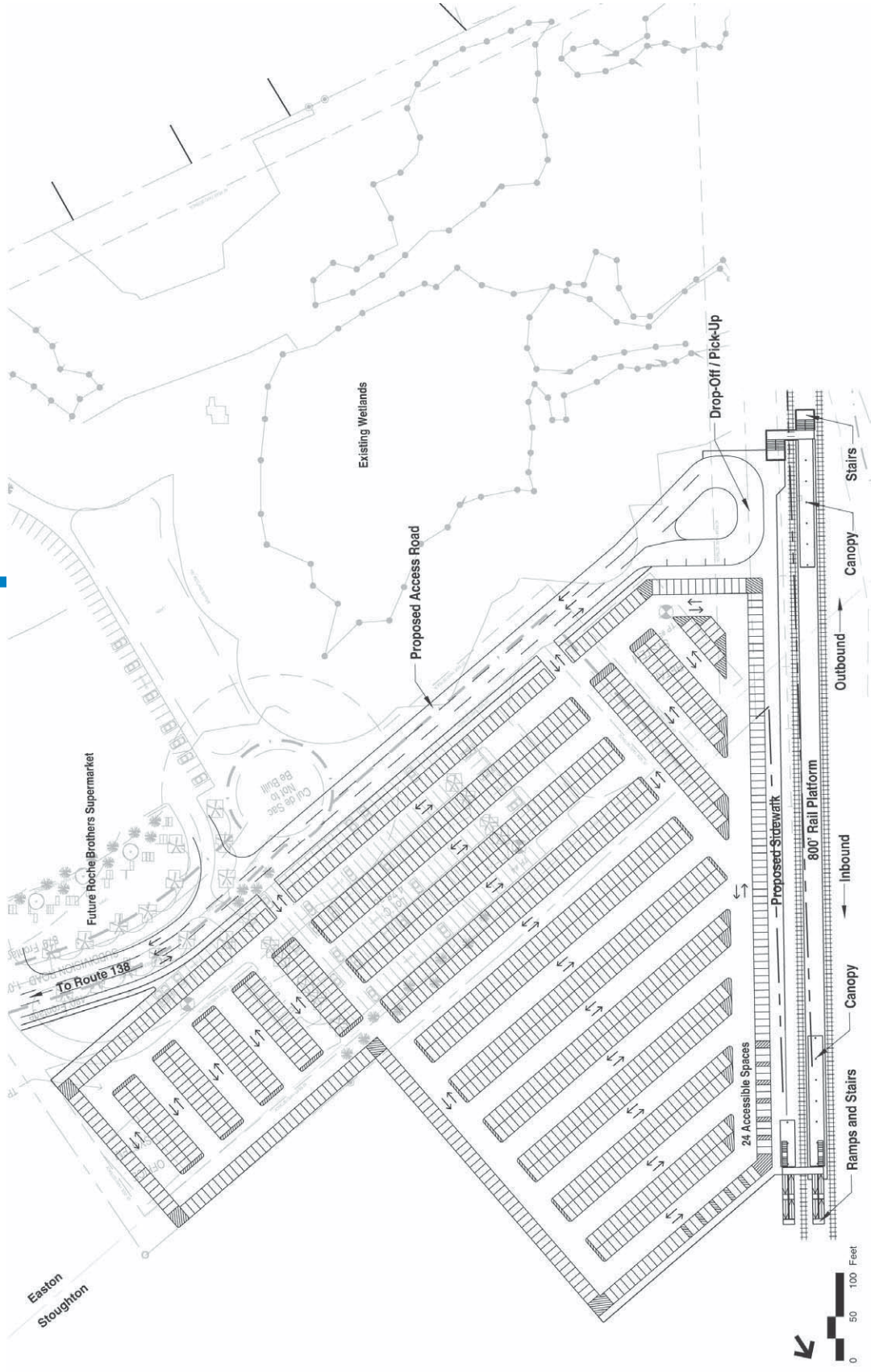
# Stoughton Station - Conceptual Site Plan







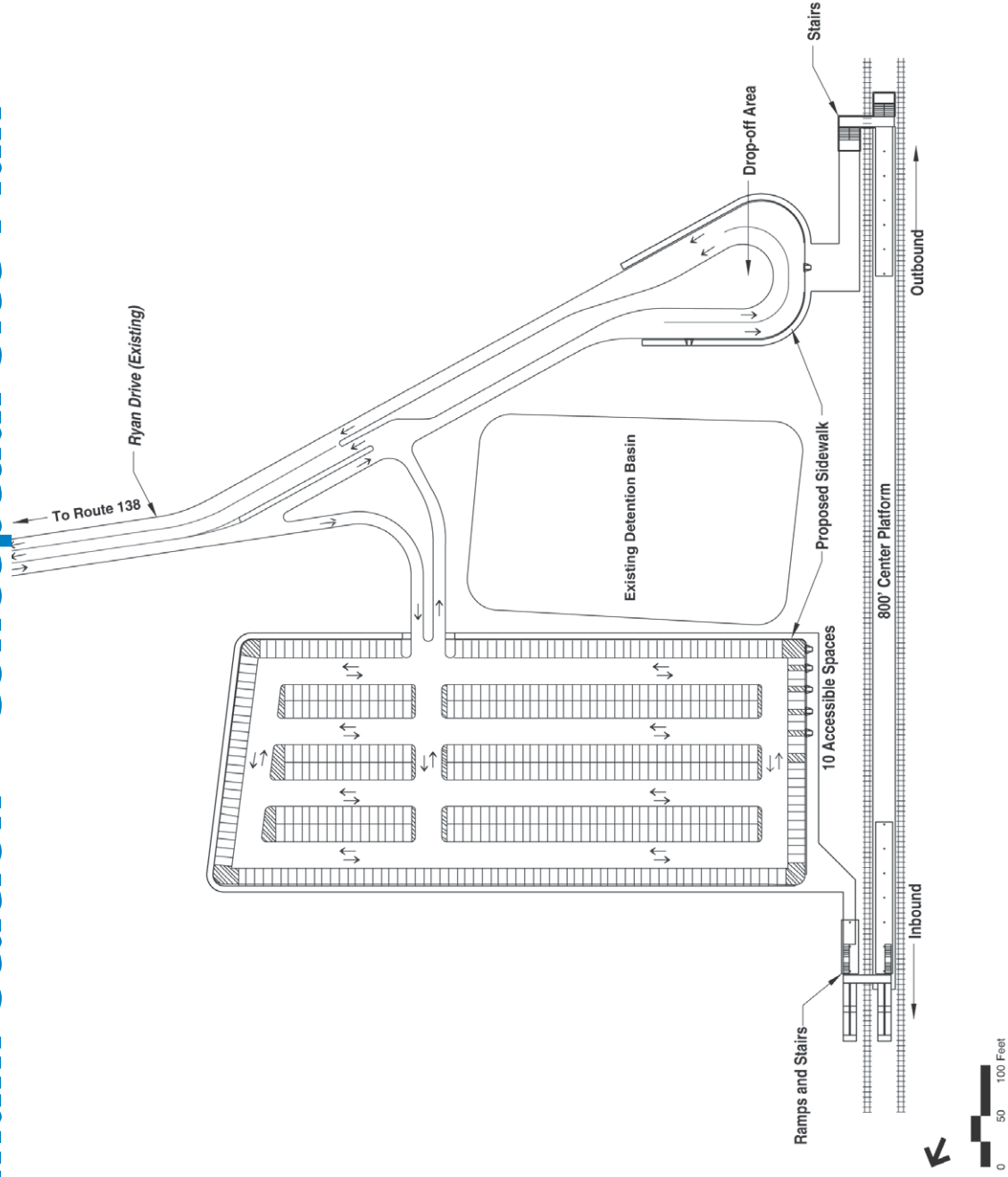
# North Easton Station - Conceptual Site Plan





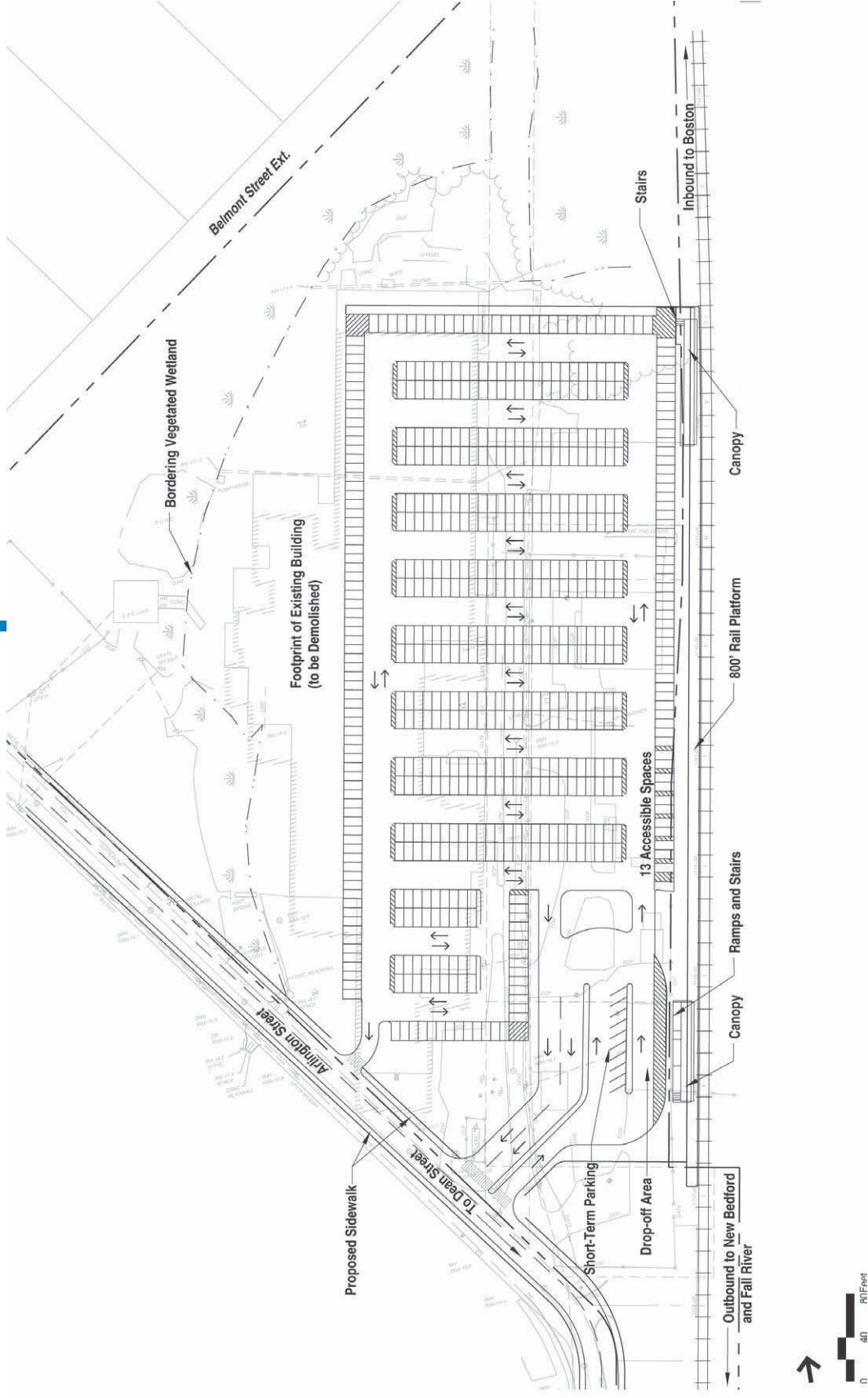
MBTA New Bedford/Fall River Commuter Rail Extension

# Raynham Station - Conceptual Site Plan



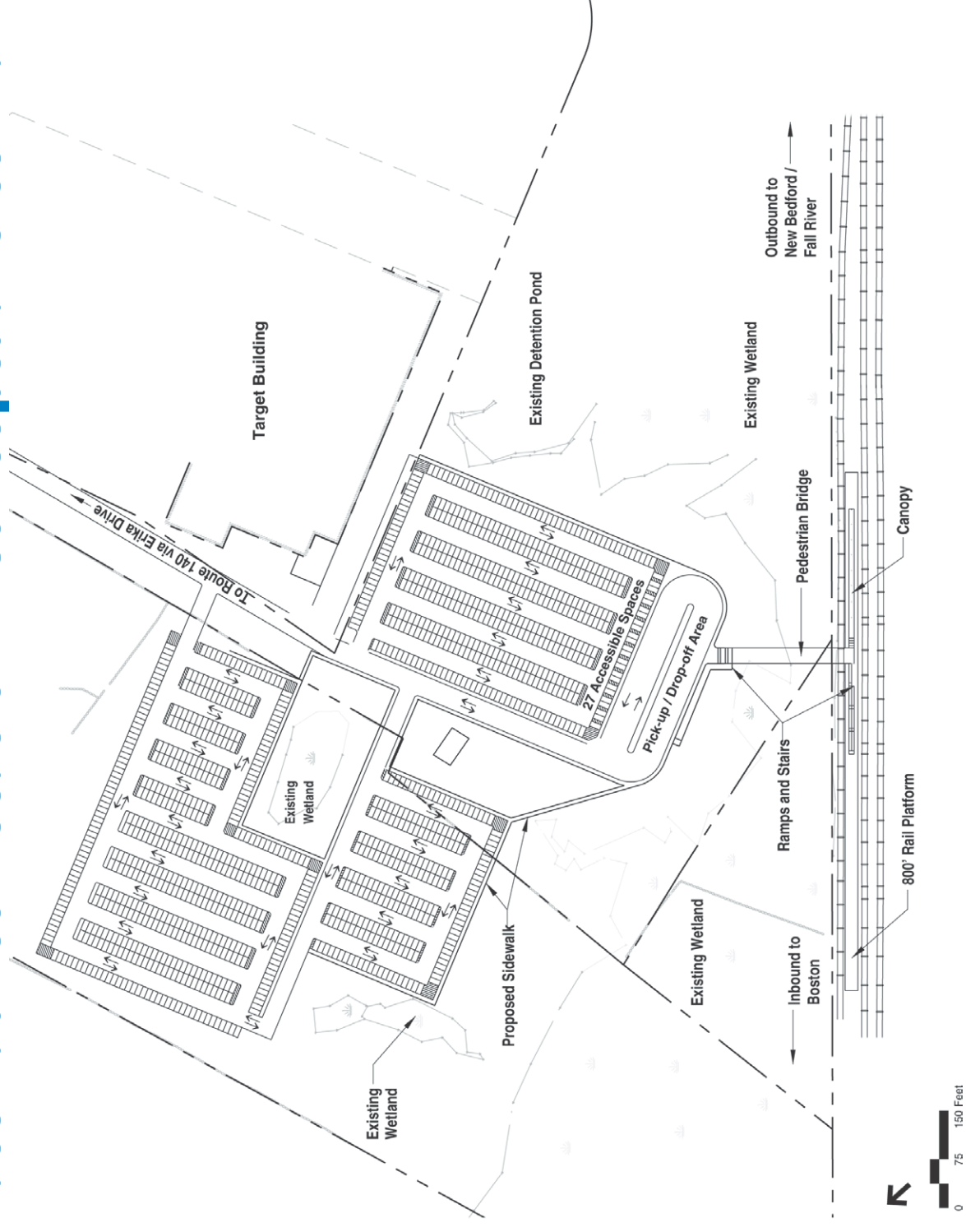


# Dean Street Station - Conceptual Site Plan





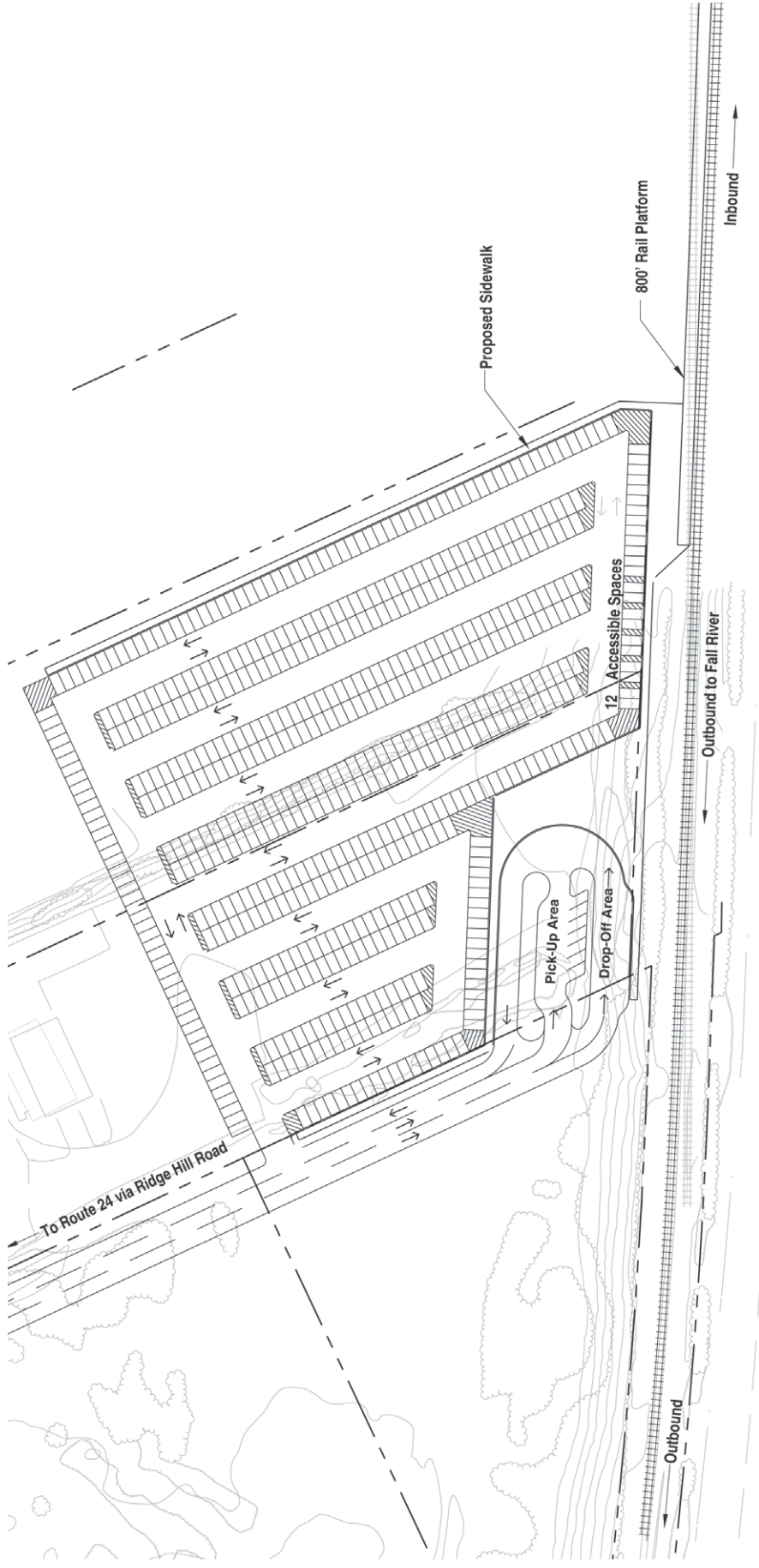
# East Taunton Station - Conceptual Site Plan







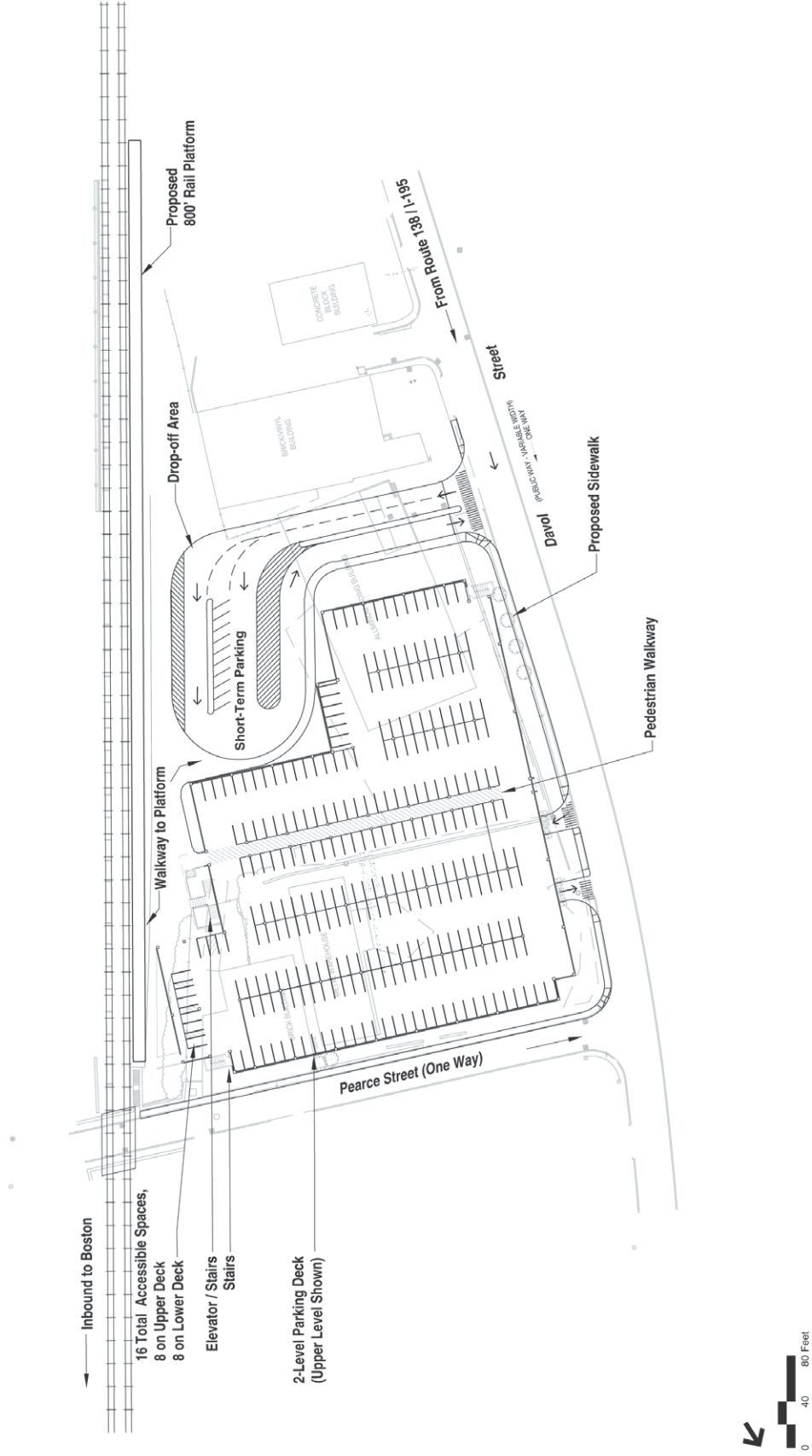
# Freetown Station - Conceptual Site Plan





MBTA New Bedford/Fall River Commuter Rail Extension

# Fall River Station - Conceptual Site Plan

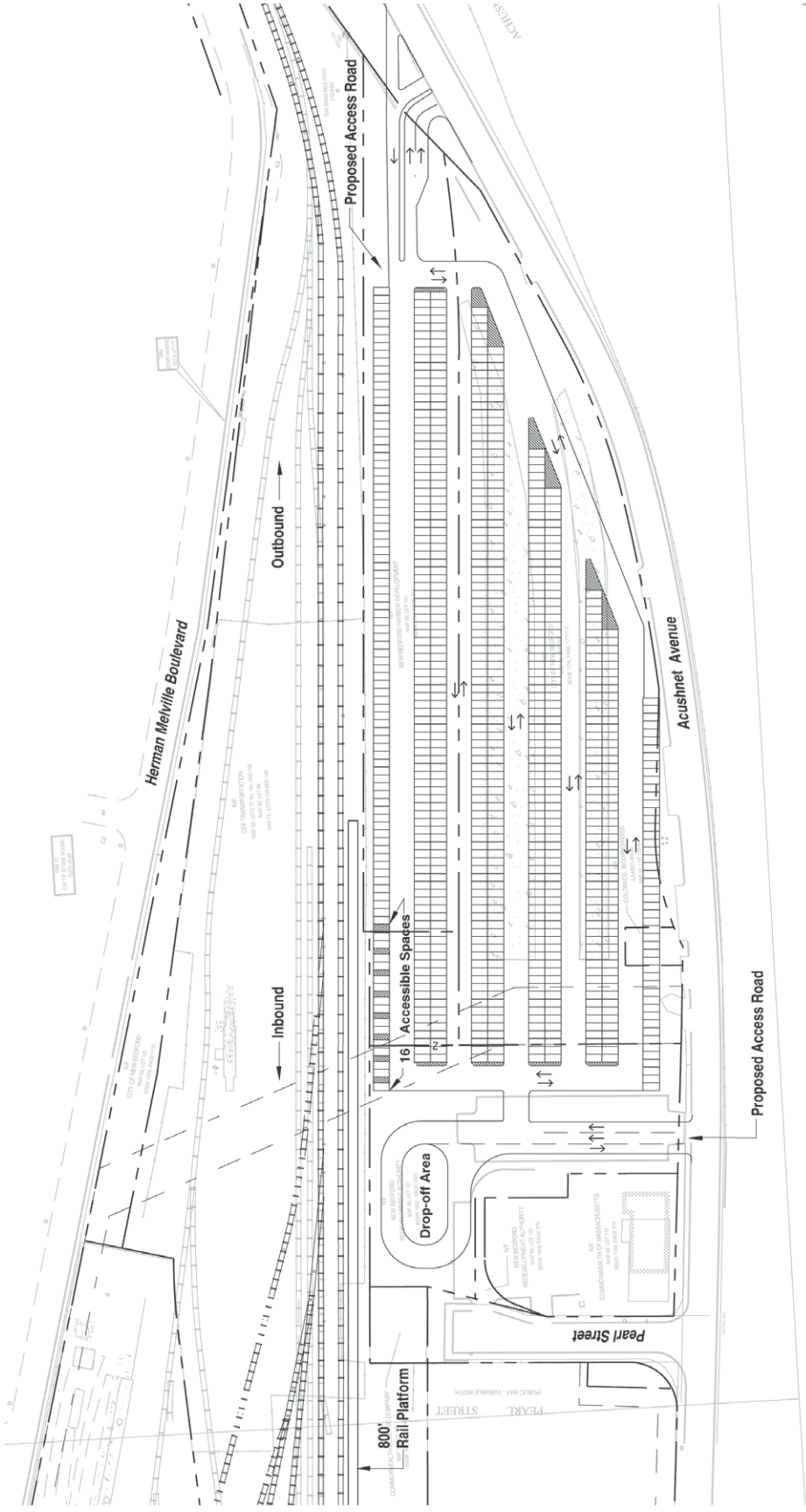




[illegible]



# New Bedford Station - Conceptual Site Plan



**New Bedford/Fall River Operating Plan (Stoughton Alternative)**

[illegible]

**Stoughton to Taunton (Weir Junction)** – From Brock Street in Stoughton to Winter Street in Taunton (14 miles), the Stoughton Branch is inactive. There is active freight service south of Winter Street in Taunton to Ingell Street (Weir Junction) a distance of 2 miles. Substantial reconstruction of track, signals, bridges, and grade crossings will be required. Land acquisition will also be required, as private property owners own portions of the right-of-way in Raynham and Taunton.

Train service between Stoughton and Taunton was gradually discontinued during the late 1950's and early 1960's. The last train south of Stoughton (to North Easton) operated in 1965. Much of the track was subsequently removed. Some of the overhead bridges (Main Street and Bridge Street in North Easton, Thrasher Street in Taunton) have been filled in blocking the railroad right-of-way. Double track from Brock Street south to just north of Elm Street in Easton is required for operations. There are two track alternatives being considered through the Hockomock Swamp area in the towns of Easton and Raynham, the At-Grade Alternative and the Trestle Alternative. There are a total of 26 existing at-grade crossings, (18 public and 8 private) between Brock Street and Weir Junction. Of the 26 at-grade crossings, 17 crossings will remain open and be improved for safety. A bypass road will be constructed to consolidate 3 private and 1 public crossing in Stoughton.

Reconstruction of the rail line will include creating a grade-separated crossing at Route 138 in Raynham to improve safety and reduce traffic congestion. New stations will be constructed in North Easton at the Stoughton/Easton town line, in Raynham off of Route 138 at Ryan Drive, and north of Dean Street off of Arlington Street in Taunton. Realignment of the track at Weir Junction will be necessary to safely and efficiently accommodate the needs of existing freight service and uninterrupted commuter rail service along this section of track.

**Taunton (Weir Junction) to New Bedford and Fall River** - South of Weir Junction the project will progress through Cotley Junction to Myricks Junction on the Attleboro Secondary and the New Bedford Main Line. At Myricks Junction, the Fall River Secondary diverges from the New Bedford Main Line. The track segments within this section are all actively used for freight service, and are referred to as the Attleboro Secondary (extending from Weir Junction to Cotley Junction), the New Bedford Main Line (extending from Cotley Junction to New Bedford), and the Fall River Secondary (extending from Myricks Junction to Fall River). The Executive Office of Transportation and Construction (EOTC) owns the Attleboro Secondary, while the New Bedford and Fall River lines are owned by CSX (formerly Conrail). The track infrastructure condition varies, but no portions of these lines are in acceptable condition for commuter rail service (Class 4 track) at required operating speeds. Infrastructure improvements consisting of track, grade crossings, bridges, and signals improvements are required for commuter rail operation.

A new track layout is proposed at the East Taunton Station site to accommodate both commuter rail and freight operations. This area is referred to as Cotley Junction and is the location where CSX stages freight train movements from the Attleboro

Secondary to the Middleborough Secondary. At this critical location, freight trains lay over on the tracks during the day for a significant period of time. In order to ensure that commuter rail operations are not interrupted, two additional tracks are required at this location for a total of three tracks. One track will be dedicated to MBTA commuter rail operations, CSX and the MBTA will share one track, and one track will be dedicated to freight.

The Fall River Secondary was constructed for, and contains, a single track. This segment is infrequently used for freight service (twice a week). It is currently maintained to Class 1 requirements suitable for 10 MPH freight and 15 MPH passenger rail. Due to its condition, this segment of the track requires complete replacement of the ballast, ties and track in order to achieve the required Class 4 standards. To facilitate passenger operations, the MBTA proposes to construct a passing siding along the west side of the Fall River Secondary in Fall River.

The New Bedford Main Line was originally constructed for two tracks. Although only one track remains, the rail bed will require some modifications to support a second track. This segment is infrequently used by freight (service three times a week). It is currently rated as Class 1 (suitable for 10 MPH Freight and 15 MPH Passenger). Due to its condition, this segment of the track also requires complete replacement of the ballast, ties, rail and bridges in order to achieve the required Class 4 standards. To facilitate passenger operations, the MBTA proposes to reconstruct the original second track throughout the length of the New Bedford Main Line

Land acquisition will be required for construction of the Stoughton Alternative. The right-of-way from Stoughton Station south to Route 138 in Raynham is owned by the MBTA. In this section, land will be required from private property owners to construct the Frontage Road in Stoughton. The former right-of-way from south of Route 138 to Longmeadow Street in Taunton (north of Weir Junction) is owned by 19 individual private property owners. The MBTA will require that portions of the 19 properties between Route 138 and Longmeadow Street be acquired to reinstate commuter rail along the Stoughton Alignment. The right-of-way from Longmeadow Street to Cotley Junction is owned by the Executive Office of Transportation and Construction (EOTC) and will not require land acquisition. The New Bedford Main Line and the Fall River Secondary are owned by CSX (formerly Conrail). The MBTA is currently in negotiations with CSX to obtain a long-term operating agreement for commuter rail service. Land acquisition will also be required at the North Easton, Raynham, Dean Street, East Taunton, Freetown, Fall River, Battleship Cove, and New Bedford stations and the Freetown and New Bedford Layover Facilities. Construction of the Stoughton Alternative will require a total land acquisition of 81.93 acres.

Capital cost estimates for both the infrastructure improvements and equipment requirements have been developed for the Stoughton Alternative. An annual operating cost estimate has also been developed. The estimate includes the

infrastructure and operating costs of the New Bedford Main Line and the Fall River Branch. The following table summarizes the cost estimates for this alternative. The costs are shown in Table E-4 in current (2005) dollars.

**Table E-4  
Stoughton Alternative: Cost Estimate Summary**

Item	Estimated Cost (2005\$)
<b>Infrastructure<sup>1</sup></b>	
ROW Preparation	41,664,975
Structures	132,981,348
Track Structure	217,646,049
Signal System	68,705,057
Stations/Parking/Roads	<u>79,651,682</u>
<b>Subtotal</b>	<b>\$540,649,111</b>
<b>Real Estate</b>	<b>20,952,775</b>
<b>Equipment<sup>2</sup></b>	<b>82,317,883</b>
<b>Mitigation</b>	<b>5,000,000</b>
<b>Construction Phase Services</b>	<b><u>20,384,546</u></b>
<b>Total Capital Cost</b>	<b>\$669,304,315</b>
<b>Annual Operating Cost</b>	<b>\$17,378,571</b>

1 All Infrastructure line item costs include a 10 percent contingency, an 8 percent engineering cost, and a 5.5 percent project administration cost.

2 Equipment costs include a 5 percent contingency and a 3 percent engineering and administration cost.

3. Estimate does not include costs associated with CSXT or any municipal mitigation.

## Transportation Benefits

The New Bedford/Fall River commuter rail service will provide regional transportation benefits by:

Reducing highway congestion by transferring automobile users to commuter rail resulting in 5,900 new daily commuter rail trips – a decrease of almost 6,000 vehicles per day from the congested Route 24, I-95, and I-93 system.

Improving regional air by reducing emissions of carbon monoxide and volatile organic carbons, but will increase regional emissions of nitrogen oxides.

Improving the regional transit system capacity by providing a new mode choice and connectivity other than the automobile and bus. It also provides transit services to a new region that currently does not have commuter rail as a transportation option;

Improving access and opportunity to downtown Boston that will help foster economic development to the Southeastern Massachusetts region.

The Stoughton Alternative is the only viable alternative because:

It meets all four of the MBTA service policy delivery criteria. The operating plan provides three inbound trips from each terminal (six total) during the weekday morning peak period and three outbound trips to each terminal (six total) during the weekday evening peak period. The proposed service plan of 36 trips a day meets the on-time performance criteria for both peak period and 24-hour operations. The proposed span of service meets the MBTA's weekday and weekend service criteria. Finally, the projected ridership and fleet capacity meet the maximum loading criteria.

In addition, the Stoughton Alternative attracts the highest total ridership and the highest number of new transit trips. The projected travel times are the shortest of the four commuter rail alternatives. The air quality benefits are the highest projected magnitude.

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## Environmental Consequences

Construction of the Stoughton Alternative will result in unavoidable environmental impacts primarily due to the restoration of commuter rail service along an inactive right-of-way, which is located adjacent to residential areas, historic districts, and a state-designated Area of Critical Environmental Concern. As described below, construction will affect wetlands and state-listed rare species, and will result in increased noise and vibration impacts to residents near the ROW.

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### Wetlands

Wetland resource areas along the entire project corridor were identified and field-delineated to ensure accuracy of the wetland impact estimates. Wetlands identified along the corridor include a wide range of wetland types, with a corresponding range of functions and values, from small isolated wetlands with limited functional value to large, regionally important wetland systems. Wetland resource areas within or adjacent to the right-of-way include land under water, bank, bordering vegetated wetland, bordering land subject to flooding, coastal bank, and riverfront area.

Impacts to wetland resource areas are unavoidable, and have been minimized to the greatest extent practicable. The existing rail line was constructed across wetlands: wetland resource areas currently extend to the base of the railbed, both in the inactive and active sections. Other wetland areas have developed within the railbed since the track was removed in the 1960s, due to blocked drainage or diversion of streams onto the right-of-way. Impacts will be minimized by the use of narrow construction footprints, retaining walls, and special bridge or culvert repair methods. The project has been designed to avoid any loss or impairment of the most sensitive wetlands within the Hockomock Swamp or Pine Swamp areas, but will unavoidably impact a wetland within the ACEC that has formed on the gravel railbed. The existing rail right-of-way crosses several perennial streams and rivers, and therefore its reconstruction cannot avoid work within riverfront area or bordering land subject to flooding.

The project will result in the loss of 6.8 acres of bordering vegetated wetland, 12,227 linear feet of bank, and will alter 6.8 acres of bordering land subject to flooding. An additional 19.3 acres of previously developed riverfront area will be reconstructed within the railbed. These impacts have been calculated for the Trestle Alternative. The At-Grade Alternative would have more temporary impact to Bank and BVW in the Hockomock Swamp as a result of the reconstruction of 18 culverts and construction of approximately 6,000 linear feet of retaining walls.

The majority of these impacts, including work within riverfront area, are within the area previously disturbed by construction of the railbed. Some of these impacts are within areas of estimated habitat of rare wildlife species, and one affected wetland is within the ACEC. For these reasons, and since the loss of bordering vegetated wetland is greater than 5,000 square feet, the project will require a Variance from the regulations under the Wetland Protection Act.

The MBTA has committed to a number of mitigation measures designed to minimize and compensate for temporary and permanent impacts to wetlands. Compensatory mitigation will be provided for impacts to wetland resource areas through the restoration of altered or degraded wetlands, and by the construction of new replacement wetlands and bank. Best management practices will be employed during construction, and will be monitored by an Independent Environmental Observer.

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## Water Quality

Surface and groundwater resources were identified adjacent to the New Bedford-Fall River Commuter Rail ROW. Sensitive resources include recharge areas of public drinking water supply wells (Zone II and Interim Wellhead Protection Areas [IWPA's]) and Outstanding Resource Waters (public water supply reservoirs and their tributaries). Current active commuter or freight rail lines that are within sensitive water resources include the Canton to Stoughton Commuter rail line, which is within the IWPA of Canton Well No. 7, and the New Bedford Main Line, which



crosses Fall Brook, an Outstanding Resource Water tributary to the Long Pond Reservoir. The proposed commuter rail extension would require reconstruction of the tracks within 5 Zone II areas (defined as the area of an aquifer that contributes water to a well under the most severe pumping and recharge conditions). The proposed North Easton Commuter Rail Station is within the Zone II area of proposed wells in Stoughton. With the exception of the Gary Lane Well in Easton, all public drinking water wells are located greater than 700 feet from the ROW. The Gary Lane Well is located approximately 500 feet from the ROW, which is outside of the defined Zone I. No portion of the work is within the Zone I of a public well.

Reconstruction of the track and commuter rail service will not adversely affect surface or groundwater water quality. The rail line is not anticipated to discharge pollutants to surface waters. The project will be designed, constructed and operated in accordance with all regulations and policies for the protection of water resources, and is not anticipated to result in adverse impacts to drinking water supplies, surface or groundwater resources. All commuter rail stations will be designed to meet the standards of the Massachusetts Stormwater Policy. The North Easton Station will be designed to meet the higher standards required for discharge to a critical water resource because it is within a mapped wellhead Zone II. Construction will be done in accordance with a project-specific Stormwater Pollution Prevention Plan that will include stringent measures for erosion and sedimentation control and spill prevention and control. Vegetation management following construction will be done in accordance with the MBTA's approved Vegetation Management Plan (currently being used in Canton and Stoughton), which prohibits or restricts the application of herbicides in sensitive areas, including all IWPA's, Zone IIs, and areas within 400 feet of an Outstanding Resource Water.

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## Biological Diversity and Rare Species

The protection of biological diversity ("biodiversity") is a major policy initiative of the Executive Office of Environmental Affairs. Biodiversity encompasses the protection of habitats, communities, ecosystems, and the numbers, types, and abundances of plants, animals, and invertebrates that form and inhabit these ecosystems. The assessment provided in this FEIR specifically addresses the potential impacts of the project on the biodiversity of the Hockomock Swamp Area of Critical Environmental Concern, through which the MBTA's Stoughton Branch right-of-way passes. Regular commuter and freight rail service operated on this ROW, through the swamp, from 1845 until the late 1950s. The Hockomock Swamp is perhaps the Commonwealth's largest wetland system, and includes coastal plain habitat types (Atlantic white cedar swamps, coastal plain ponds, acidic fens) that are uncommon and restricted to southeastern Massachusetts. These habitats support a concentration of rare plant, animal, and insect species, with 7 state-listed species known from the Hockomock Swamp in the vicinity of the railroad right-of-way.

The FEIR considers a wide range of potential effects on biological diversity, including habitat fragmentation, vernal pools, invasive species, and rare species. Habitat fragmentation may result from the widening of the existing gap in the forest canopy to approximately 30 feet, creating a narrow gap that may affect the movement of birds through the canopy. The At-Grade Alternative may also restrict the movement of mammals, reptiles, and amphibians across the tracks. The movement of trains (an average of 2 trains per hour between the hours of 6 AM and 1 AM) may also inhibit movement across the tracks. Reduced mobility of wildlife may reduce the effective population size of wildlife species. The study area currently consists of approximately 3,883 acres: if the tracks result in a sufficient gap to cause habitat and population fragmentation, the area will be divided into a 3,201-acre and a 682-acre fragment, each of which is sufficiently large to continue to support viable populations of all species present. However, the reconstruction of the rail will not result in the loss of any of the species or unique natural communities present within the Hockomock Swamp.

Vernal pools are also an important consideration in the evaluation of impacts to biological diversity, since these habitats provide necessary breeding sites for several forest amphibians as well as certain invertebrate species. Thirty vernal pools along the MBTA ROW (20 that are currently certified by the Natural Heritage Program) were identified and studied to determine impacts. The project has been designed to avoid the loss of vernal pool habitat, and will not require the placement of fill within any vernal pool along the corridor. The removal of trees adjacent to certain vernal pools may alter the tree canopy and shading, but is not anticipated to have an adverse effect on their ability to successfully support obligate vernal pool organisms.

The majority of the state-listed species reported in the Hockomock Swamp area do not occur in the vicinity of the MBTA ROW and will not be affected by the proposed project. These are species of coastal plain ponds, open fields, or acid fens. None of these habitat types occurs in the vicinity of the ROW. The MBTA has determined, through an intensive study, that habitat of 7 state-listed species occurs on or adjacent to the ROW. Several of these species regularly move across the right-of-way, portions of which are also used by turtle species as nesting habitat. Areas used by these species for breeding or migratory habitat may be adversely affected by the reconstruction of the railbed and track, if the At-Grade Alternative is selected. Where retaining walls are proposed (the At-Grade Alternative), movement of spotted turtles across the ROW would be eliminated except at culverts and wildlife underpasses. The Trestle Alternative would not affect the habitat or movement of state-listed species (or of common species), and would not affect biological diversity.

The MBTA has developed a draft Conservation Plan to protect these rare species from harm during construction and operation of the commuter rail line. The Conservation Plan includes restoration of Atlantic white cedar swamp habitat; construction of additional turtle nesting habitat; construction of wildlife underpasses and salamander tunnels in Pine Swamp; funding a rare species research program; and funding acquisition of critical habitat areas.

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## Historical and Archaeological Resources

Historical and archaeological resources within the New Bedford-Fall River Commuter Rail's Area of Potential Effect (APE) were identified following guidelines established by the Massachusetts Historic Commission (MHC) and the National Park Service (NPS). The APE is defined as all areas within 250 feet of the ROW, and the entire limits of each Historic District through which the ROW passes. This research included background research to identify known historic and archaeological resources and provide information for the development of historic contexts, and a reconnaissance survey to determine the nature and extent of all potentially eligible properties within the APE. All properties have been evaluated according to the applicable criteria for listing in the National Register of Historic Places, and project-related impacts will be assessed.

The rail route passes through several railroad-related historic districts, including the H.H. Richardson Historic District in North Easton (a designated National Historic Landmark), the North Easton Historic District, the Church Green Historic District in Taunton, the Assonet Historic District in Freetown, and the Acushnet Heights Historic District in New Bedford. Other notable resources include historic mill complexes in New Bedford and Fall River and the Stoughton Square area. There are no known (previously-documented) historic resources within the APE in Raynham, Berkley, or Lakeville.

Potential impacts to historic resources include factors that have the potential to directly or indirectly affect historic properties, including increases in noise and vibration, introduction of new visual and setting elements, changes in traffic and access patterns, atmospheric differences, construction activities, indirect effects and cumulative impacts. These impacts will be elucidated in consultation with the MHC and Corps of Engineers, during the subsequent federal Section 106 process.

A reconnaissance-level archaeological survey was conducted for the entire APE. This survey determined that there are no known archaeological resources at the station sites, and that the stations are located at areas of low archaeological sensitivity. Further archaeological investigation is recommended at several locations that were determined to have high sensitivity for historic resources. The MBTA will undertake additional, intensive (locational) surveys at these locations subsequent to the FEIR.

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## Hockomock Swamp ACEC

The Hockomock Swamp Area of Critical Environmental Concern (ACEC) includes approximately 16,800 acres of land in Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater. This wetland system, which includes the Hockomock Swamp, the Dead Swamp, the Titicut Swamp, and the Little Cedar Swamp, is described by DEM as the largest vegetated freshwater wetland system in Massachusetts. These wetlands serve as the headwaters of the Town River, a tributary of the Taunton River, and overlay a system of high and medium yield

aquifers that supply public drinking water wells in Raynham and West Bridgewater. The ACEC provides habitat for at least 17 species listed as rare, endangered, or of special concern by the Natural Heritage and Endangered Species Program. Seven of these species occur in the vicinity of the rail right-of-way.

Although much of the Hockomock Swamp portion of the ACEC (approximately 5,000 acres) is owned by the Department of Environmental Management as the Hockomock Swamp Wildlife Management Area (WMA), the MBTA has continued to own the railroad right-of-way through the WMA and the ACEC from Route 123 in Easton to I-495 in Raynham. This land was acquired by the MBTA from the New York, Hartford and New Haven Rail Road in 1973 and reserved as a public transportation corridor.

The use of the Stoughton Branch for commuter rail service will require that the existing rail bed through the Hockomock Swamp WMA and ACEC be upgraded. As described in Chapter 3 of this FEIR, new ballast, ties, and track will be installed. Bridges will be rehabilitated or replaced as needed, and culverts may be replaced. Two alternatives are considered for this area: the At-Grade Alternative and the Trestle Alternative. The At-Grade alternative would reconstruct the rail infrastructure on grade, replacing the majority of cross-culverts, and would incorporate wildlife underpasses and salamander tunnels to mitigate for barrier effects to small mammals, turtles and salamanders. The Trestle Alternative would construct the track on an elevated trestle between Foundry Street in Easton and the Raynham/Taunton Greyhound Park. The Trestle Alternative would allow unrestricted passage of wildlife, and would not require the reconstruction of existing culverts.

The project will result in the loss of Bordering Vegetated Wetland and Bank located within the ACEC limits, primarily south of the Raynham – Taunton Greyhound Park. This work is not within rare species habitats, and will not affect the biological diversity of the ACEC due to its location between an industrial park and the Greyhound Park facilities. The remaining construction in the ACEC will require work within the wetland buffer zone and riverfront area.

Vegetation management within the Hockomock Swamp ACEC will not impact vegetation, wildlife or water quality. The use of herbicides will be done in accordance with the MBTA's Vegetation Management Plan, which requires manual removal of vegetation within 100 feet of wetlands, standing or flowing water. There will be no use of herbicides in the Hockomock Swamp. The MBTA would also implement a program to monitor and remove invasive plant species along the right-of-way. As described in detail in Section 4.3 of this FEIR, reconstruction of the tracks and railbed using the At-Grade Alternative may also result in indirect impacts to the biological diversity of the Hockomock Swamp ACEC, by reducing the ability of wildlife species, including state-listed rare species, to cross the rail bed; resulting in the loss of nesting habitat for state-listed turtle species; interrupting the forest canopy and creating new "edges" that may affect forest interior habitat; and by noise impacts along the rail corridor. The Trestle Alternative would mitigate for the majority of these impacts.

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## Air Quality

An air quality study was undertaken to evaluate air quality impacts of the project, and included a microscale (localized) analysis of selected intersections in the vicinity of the proposed stations as well as a mesoscale (regional) analysis of impacts of the commuter rail operations. The predominant sources of air pollution anticipated from the proposed commuter rail extension include emissions of carbon monoxide (CO) and ozone precursors, nitrogen oxides (NO<sub>x</sub>), and volatile organic compounds (VOCs), from locomotive engines and from automobiles.

The microscale analysis indicates that vehicular traffic generated by the proposed commuter rail stations is likely to result in minor increases in CO emissions at congested intersections near the stations. Increases are predicted to be 0.1 part per million (ppm) or less at all locations, and will not result in any exceedences of the EPA's National Ambient Air Quality Standards or DEP standards. The mesoscale analysis, which determined the decrease in vehicular emissions due to decreased automobile trips and the increase in emissions due to the locomotives, found that the project would result in measurable air quality benefits by substantially reducing the emission of VOCs and CO on a regional basis. NO<sub>x</sub>, however, will increase as a result of locomotive operations.

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## Noise

Noise impacts were identified by comparing the existing sound levels along the corridor with projected future sound levels. Existing sound levels were determined using noise monitoring equipment. Future sound levels were calculated using methods developed by the Federal Transit Administration (FTA). Noise generated by train operations is primarily due to the locomotive exhaust and cooling fans, the sound of the steel wheels on the rails, and the locomotive warning horn which is sounded one-quarter mile prior to all public grade crossing. Noise is also dependent on train speed.

Commuter rail operations are predicted to create noise impacts, which are categorized into moderate and severe, depending on the existing noise and the predicted project-related noise. In most areas, severe impacts are predicted to occur at locations within 120 feet of the track, and moderate impacts at locations between 120 and 140 feet. In areas where substantial highway or roadway noise is already present, severe impacts are predicted at locations less than 50 feet from the track, and moderate impacts at locations between 50 and 100 feet from the track. Based on this analysis, a total of 394 receptors are predicted to have moderate impacts, and 247 receptors to have severe impacts along the project corridor between Canton Junction and the terminal stations of New Bedford and Fall River.

The MBTA is committed to providing noise mitigation for all noise-sensitive locations that are predicted to experience severe noise impacts. The MBTA has developed a project-specific noise mitigation implementation plan that identifies specific mitigation areas and measures and develops a mitigation implementation

schedule (see Chapter 5 of the FEIR). Mitigation measures may include noise barriers or building soundproofing. Every reasonable effort will be made to minimize construction noise impacts through the development and implementation of noise guidelines and specific noise control measure that will be incorporated into the construction documents.

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## Vibration

Vibration levels associated with the Stoughton Alternative were evaluated using the FTA project-level vibration criteria. These criteria are based on single-event pass by levels, receptor sensitivity, and frequency of occurrence. The procedures used in this analysis were conducted in accordance with the FTA guidelines and procedures.

The project design will use continuously welded rail along the Stoughton Alternative. Continuously welded rail (CWR) track produces less vibration relative to other track configurations, such as jointed rail. The impact distances are expected to range from 54 feet for commuter rail trains traveling at 40 mph, to 77 feet for trains traveling at the maximum allowable speed of 70 mph. Exceedance of the FTA Annoyance criterion (80 VdB) for 'infrequent' events would therefore only occur at residences or businesses within 77 feet of the track, or within 54 feet of the track in areas adjacent to stations where trains are moving more slowly.

The New Bedford/Fall River Commuter Rail Extension is predicted to result in vibration levels in excess of the FTA annoyance criteria for 235 residences and 76 businesses. This represents an addition of 47 new residential vibration impacts and a decrease of 58 existing business vibration impacts in comparison to existing conditions. There are no locations where the FTA Damage Criterion (100 VdB) would be exceeded, even for the most fragile historic buildings.

The MBTA has developed a mitigation plan that identifies measure that would be implemented at specific locations to reduce vibration impacts. These measures are summarized in Table E-5 and described in detail in Chapter 5 of the FEIR.

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## Hazardous Materials

Preliminary site investigations and file data reviews were conducted for the MBTA-owned portions of the New Bedford/Fall River Commuter Rail corridor and proposed station locations to identify areas where oil and hazardous materials may occur and may affect project construction. The investigation determined that, due to existing conditions and known environmental concerns, additional investigations prior to construction will be required at the proposed Raynham, Dean Street, Fall River, and New Bedford Commuter Rail stations, as well as at the proposed Route 138 grade separation in Raynham. Five areas along the right-of-way between Canton and Taunton were identified where soil or groundwater contaminants may have

migrated into the ROW. Construction in these areas will require the MBTA to integrate Massachusetts Contingency Plan (MCP) compliance activities with construction.

The Brookfield Engineering site in Stoughton was identified as a particular area of concern by local residents. Contamination at this site is the result of a release of degreasing solvents, and is present at depths greater than 5 feet below the surface. The addition of a second track within the active commuter rail ROW at this location will require only minimal excavation and will not encounter contaminated soil or groundwater. The DEP has indicated that the addition of a second track will have no effect on the direction or rate of migration of the contaminant plume or on remedial activities.

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## Traffic Impacts

A traffic impact analysis was conducted to identify impacts and mitigation measures associated with the proposed commuter rail stations and grade crossings. The analysis showed that there will be no new traffic impacts associated with the Canton Junction, Canton Center, or Stoughton Stations, and no traffic impacts associated with the Battleship Cove Station. The analysis conducted for the remaining stations examined existing traffic volumes and operations, intersection and roadway conditions and geometry, and accident history. Future (2010) traffic volumes and operations were generated for the No-Build and Build conditions at each of these stations, based on regional models for population growth. Traffic volumes predicted for the morning peak hour at the new commuter rail stations ranged from 170 trips (Raynham) to 655 trips (North Easton).

Traffic generated by the proposed commuter rail stations is predicted to adversely affect the function of some study area intersections, particularly along Route 138. These impacts will be mitigated by improvements to the timing of existing traffic signals, intersection improvements (including the addition of turning lanes), or installation of new traffic signals. The FEIR (Section 4.5 and Chapter 5) provides detailed mitigation commitments.

The grade crossing impact assessment evaluated the 84 public and private grade crossings along the Stoughton Alternative, which include 8 crossings along the active commuter rail right-of-way from Canton Junction to Stoughton Station, 26 crossings between the existing Stoughton Station and Weir Junction in Taunton, and 50 crossings located along active railroad (currently used for freight service only) between Weir Junction and the terminals in New Bedford and Fall River.

Delay times and traffic queue lengths were determined for each public crossing, using predicted 2010 morning and evening peak hour traffic volumes. Where queue lengths were determined to be likely to affect intersections or driveways, mitigation measures were identified. Most of the grade crossings along the Stoughton Alternative will not result in adverse traffic impacts, and require only standard improvements such as railroad crossing gates and warning lights, advance warning signs, pavement markings, driveway reconfiguration, and clearing of vegetation near

the crossing. Some of these crossings may also require minor geometric modifications to the roadway. Morton Street and the 3 private crossings south of Morton Street will be closed due to the insufficient clearance between the track and Route 138, and vehicles re-routed to the grade-separated crossing at Totman Farm Road on a new bypass road.

Some of the crossings will require the installation of railroad pre-empted traffic signals at intersections near the crossing in addition to the standard improvements described above, to avoid queue lengths that would affect intersections. A few of the crossings along the Stoughton Branch are low volume, privately maintained crossings. At these locations, installation of a gate with lock and key or keypad access at the crossing is recommended. Several grade crossings may be eliminated by consolidation. These crossings may be combined into one location because of safety issues and/or their close proximity to other crossings. This treatment would require construction of new roadways and/or shared driveways.

Grade separation is proposed at one location along the Stoughton Alternative. The crossing of Route 138 in Raynham will require grade separation due to high traffic volumes and the skew of the railroad alignment to the highway.

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## Permits and Approvals

Restoration of commuter rail service to New Bedford and Fall River using the Stoughton Alternative will require several state and federal permits and approvals. The MBTA will file applications for these permits during the design phase, following completion of MEPA review.

An Order of Conditions will be required under the Massachusetts Wetlands Protection Act. The project exceeds certain regulatory thresholds, and will require a Variance from the Commissioner of DEP. The MBTA may pursue a single, project-wide variance through an application to DEP, or may submit individual Notices of Intent and pursue variances separately in each community.

Water Quality Certification, issued by DEP, will be required for the placement of fill in wetlands.

A Department of the Army Permit, under Section 404 of the Clean Water Act, will be required for the placement of fill in wetlands

A Conservation Permit under the Massachusetts Endangered Species Act may be required for the “taking” of rare species. However, the MBTA may comply with the requirements of the Endangered Species Act through this MEPA review and the implementation of a Conservation Plan.

A Consistency Determination with the Massachusetts Coastal Zone Management Program is required prior to issuance of the Section 404 permit



Review by the Massachusetts State Historic Preservation Officer and Corps of Engineers under Section 106 of the National Historic Preservation Act

Chapter 91 Waterways License or permit may be required for reconstruction of the bridges crossing the Taunton River.

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## Summary of Mitigation

The MBTA is committed to providing mitigation, where practicable, to mitigate or compensate for unavoidable impacts. Table E-5, below, outlines the MBTA's mitigation commitments, which are provided in more detail in Chapter 5 of this FEIR. Specific detailed mitigation measures and an implementation schedule will be determined and designed during subsequent design process.

**Table E-5**  
**Summary of Mitigation Commitments**

Impact Type and Mitigation Commitment	Impact Type and Mitigation Commitment
<p style="text-align: center;"><b>Wetland Impacts</b></p> <ul style="list-style-type: none"> <li>➤ Provide full compensatory mitigation for all unavoidable loss of wetland area; provide mitigation for loss of wetland functions</li> <li>➤ Protect wetlands during construction by best available erosion and sedimentation control methods</li> <li>➤ Minimize fill in wetlands within the Hockomock Swamp and Pine Swamp by using a reduced ROW width and special construction techniques</li> </ul>	<p style="text-align: center;"><b>Noise and Vibration</b></p> <ul style="list-style-type: none"> <li>➤ Implement noise and vibration mitigation plan: implement noise barriers, soundproofing, and vibration isolation/absorbing devices as practicable</li> <li>➤ Construction specifications will be prepared to reduce construction noise impacts</li> </ul>
<p style="text-align: center;"><b>Water Quality</b></p> <ul style="list-style-type: none"> <li>➤ Utilize appropriate BMPs for construction erosion and sedimentation control</li> <li>➤ Implement spill control program during construction</li> <li>➤ Use approved vegetation management plan for ROW maintenance, with no herbicide spraying in sensitive areas</li> <li>➤ Design and operate stations in compliance with DEP Stormwater Policy</li> </ul>	<p style="text-align: center;"><b>Historical Properties</b></p> <ul style="list-style-type: none"> <li>➤ Develop detailed mitigation plans following identification of adverse effects</li> </ul>
<p style="text-align: center;"><b>Wildlife/Rare Species</b></p> <ul style="list-style-type: none"> <li>➤ Provide wildlife underpasses/tunnels as practicable</li> <li>➤ Use all practicable means and measures to avoid harm to rare species populations and habitats. Prepare and implement a conservation plan for affected rare species, to minimize impacts and provide long-term net benefits to the local populations</li> <li>➤ Implement post-construction monitoring program for invasive plant species</li> </ul>	<p style="text-align: center;"><b>Hazardous Materials</b></p> <ul style="list-style-type: none"> <li>➤ Conduct Phase I site assessments at the New Bedford, Raynham and Dean Street Stations; remediate contaminated areas as appropriate</li> <li>➤ Develop and implement construction program to identify contaminated soil or groundwater encountered during construction and dispose of appropriately</li> </ul>
<p style="text-align: center;"><b>Traffic</b></p> <ul style="list-style-type: none"> <li>➤ Improve intersections of Route 138 in Easton – Route 123, Union Street, and Elm Street</li> <li>➤ Improve intersection of Route 138 and Foundry Street in Raynham</li> <li>➤ Improve intersection of Ridge Hill Road and South Main Street in Freetown</li> <li>➤ Improve intersections affected by the Fall River and New Bedford stations</li> <li>➤ Reconfigure Stoughton Station so that stopped trains do not block Wyman Street</li> <li>➤ Grade-separate the railway and Route 138 in Raynham</li> <li>➤ Improve intersection of Route 44 and Arlington Street in Taunton</li> <li>➤ Improve intersection of Route 140 and Hart Street in Taunton</li> </ul>	<p style="text-align: center;"><b>Properties</b></p> <ul style="list-style-type: none"> <li>➤ Provide safety fencing</li> <li>➤ Provide landscaping to maintain privacy</li> </ul>
	<p style="text-align: center;"><b>Land Use</b></p> <ul style="list-style-type: none"> <li>➤ Support Growth Management Task Force Activities: provide recommendations to corridor communities</li> </ul>
	<p style="text-align: center;"><b>Safety</b></p> <ul style="list-style-type: none"> <li>➤ Install and maintain best available grade crossing protection and warning devices</li> <li>➤ Implement Operation Lifesaver safety training and education programs in local schools and communities</li> <li>➤ Construct bypass roadway in Stoughton south of Morton Street to protect safe driveway access</li> <li>➤ Install chain-link fencing to control access</li> </ul>
	<p style="text-align: center;"><b>Air Quality</b></p> <ul style="list-style-type: none"> <li>➤ Provide electric block heaters at layover facilities to eliminate overnight idling.</li> <li>➤ Use new or rebuilt locomotives that meet EPA Tier 1 or Tier 0 standards.</li> <li>➤ The project itself mitigates for regional air quality due to vehicular traffic reduction.</li> <li>➤ Construction specifications will require that construction equipment be retrofitted in accordance with DEP standards and will require dust controls</li> <li>➤ Pilot Program for locomotive emissions reduction</li> </ul>